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AUTHOR Blankson, Mary Lartey
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ABSTRACT

The opportunities in U.S. Schools of Public Health for exposing students likely to work in developing countries to maternal and child health (MCH) issues are examined. The educational inadequacies resulting from too much specialization call for the development of a course which uses a comparative approach to MCH problems and solution strategies for developed and developing nations. Suggestions to improve (MCH) education in Schools of Public Health include: (1) institution of directed electives for an overview MCH course; or (2) institution of a required MCH course; (3) incorporation of relevant and emerging MCH issues in all core courses providing an avenue for MCH faculty to address these areas in the core curriculum; and (4) encouraging institutions to offer double majors combining MCH with other disciplines. It is felt that these strategies would give students not majoring in MCH more exposure to the MCH knowledge base and an incentive and opportunity to become better informed and more effective as advocates for women, infants, and children in their future careers. Contains 9 references. (GLR)

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Public Health Training: Meeting the Challenge of "Health for All by Year 2000"

by

Mary Lartey Blankson, M.D., M.P.H.
Assistant Professor
Maternal and Child Health Division
School of Public Health
University of Alabama in Birmingham

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Synopsis:

The health of vulnerable populations, such as mothers and children depends on favorable policies by informed policy makers. Public Health Practitioners with formal public health training are likely to be in positions of responsibility to affect policies and services which impact on the health of disadvantaged mothers and children.

In order for future public health practitioners to be effective advocates for mothers and children, Schools of Public Health have a responsibility to introduce students to maternal and child health issues in their curriculum. Students of public health are generally given tremendous quantitative and qualitative skills without special application to problem identification and solution for special population such as mothers and children. This practice accentuates the isolation of public health education from public health practice.

Opportunities exist to target students from developing countries where the highest mortalities and morbidities in mothers and children occur. These students are recommended as primary target for maternal and child health education. A course which uses a comparative approach to maternal and child health problems and solution for developed and developing nations is suggested for foreign students and for other students intending to practice in developing countries. For domestic public health students the Nations Health Objectives for Maternal and Child Health could be used to guide the content areas of maternal and child health issues in the overall curriculum.

Introduction

Maternal and Child Health (MCH) Policies in countries determine to some extent the amount of resources committed to quality health services to improve maternal and child health status. Infant mortality is universally accepted as a sensitive maternal and child health status indicator. Therefore there is a direct relationship between infant mortality and policies affecting health of mothers and children. In what ways can Schools of Public Health in the United States influence policy changes in developing countries, to lower infant mortality rates, and improve overall maternal and child health status?

This paper examines opportunities in US Schools of Public health to expose students of various academic and practice backgrounds, and who are likely to work in the developing world to maternal and child health issues. Schools of Public Health are encouraged to explore the opportunity and develop strategies to enhance students' (both foreign and domestic) awareness of maternal and child health issues. Preparing students to be informed advocates of mothers and children will enhance the future public health professionals ability to be a manager of a "Health for All" initiative whose main beneficiaries are mothers and children.

Identification of Educational Needs

The United States of America can be effective advocates for reducing infant mortality in developing countries through several methods which include:

1. Providing funds to support appropriate effective maternal and child health programs in developing countries.
2. Providing direct services through qualified health providers.

3. Training nationals in their home countries, for example activities of University of Alabama's Sparkman Center for International Public Health Education.
4. Training nationals in U.S. Universities in public health, and
5. Influencing health and health related policies which affect mothers and children in the developing countries.

This paper assumes an association between the type of public health training including exposure to specific population groups, and students' future advocacy for the population.

U.S. Policies directed at influencing health status of mothers and children in developing countries must be translated into effective policies in the developing nations. One way to achieve this is by investing in training key health personnel in the area of public health, and specifically maternal and child health when the opportunity arises. Such an opportunity exists in schools of public health in the United States. Recently there seems to have been the recognition of the total failure of clinically trained leaders (specifically physicians) to effectively plan and manage public health programs, including the WHO's Health for All initiatives. Advocates are proposing various configurations of public health training to meet this need (1,2) This situation exists in both developing and developed countries.

Developing countries are attempting to improve the skills of public health practitioners by sending health personnel who are already in leadership positions in their countries to the United States for further training in public health. These students are usually sponsored by their governments, private organizations in

native countries or International Organizations. Most of these students come for a one year Masters in Public Health Training (MPH). The question of whether a one year MPH training is adequate preparation for public health leadership in the Third world still needs to be addressed. These same questions have been raised in the training of public health leaders in the United States. A more basic question is whether the scope and depth of public health exposure is adequate preparation to enable students to apply their skill in addressing health problems of vulnerable populations like mothers and children in the society.

In developing countries, for example, currently, public health practice (The "New Public Health" or "Health for All through Primary Health Care") is almost synonymous with maternal and child health practice. Vulnerable mothers and children constitute the greatest proportion of the population in these countries (for example, children below age 15 constitute 40-50% of these populations). Rapid population growth, infectious diseases and nutrition problems compounded by inadequate health services and poverty contribute to most mortalities and morbidities in developing countries.

Foreign Students Enrollment in U.S. Universities

A recent publication examining the origin and sponsorship for foreign students in US universities, indicated that a decrease in funding sources has led to a decrease in foreign student enrollment. The majority of foreign students are sponsored by themselves or their families (66%), home government/university (12%) and US college or university (10%) and foreign private sponsor (2.8%) (3,4). In recent years there has been a decrease in

all of these sources of funding for the foreign students because of adverse economic changes in the countries and changes in funding policies for foreigners in various institutions of higher learning in the United States. It is anticipated that there will be a reduction in overall foreign students enrollment and specifically enrollment of students from countries with the greatest crisis in their economy, mainly those on the African continent and other poor nations. It seems then that while some of these students are currently enrolled in Schools of Public Health in the U.S. great effort should be made to give special emphasis to providing students with quality public health training that will impact on health of the most vulnerable population in their nation. Most of these students come from Taiwan, China, India, Republic of Korea, Malasia and Latin America. There are fewer students from Africa and the Middle East.

Certain institutions for example Miami Dade CC, Universities of South California, Wisconsin, Texas, and Minnesota in the past have enrolled a large number of foreign students (4). However, despite the overall decrease in enrollment of foreign students in US Universities due to increasing inability of these countries to support their students financially, some schools such as University of Alabama in Birmingham (UAB) School of Public Health has experienced an increasing enrollment of foreign students, in the past few years. In 1983/84 academic year foreign students were 4.7% of all enrolled students and in 1988/89 comprised 21.7% of total student enrollment (Table I). These students come from a wide geographical area but mostly third world countries and include African and Asian students (Table 2). These two groups of students

are being highlighted because their 2 continents contribute to the largest number of infant deaths in the world, and their maternal and child health status indicators are among the poorest.

These students represent a wide spectrum of primary disciplines but the majority are clinically trained physicians and dentists (Table 3). Table 4 shows the major public health disciplines in which students are enrolled. These are Epidemiology, International Health, Health Care Organizations and Policy, and Health Education/Health Behavior. Maternal and child health has a limited enrollment of foreign students in some schools of public health. All public health students should have exposure to health issues of a vulnerable sub population groups such as, mothers and children, or the elderly, or handicapped. In particular, students preparing to work in developing nations should be exposed to the common issues in maternal and child health.

Current Approach to Meet Education Needs of MPH Students Schools of Public Health

Universally, in Schools of Public Health, MPH curriculum is structured in such a way that students are required to meet two sets of course requirements; a) the core requirements and b) the requirements of the specific program track in which the students are enrolled. In most cases for a year long program there is only enough time to take one or two elective courses. Often these elective courses are restricted by schedule limitations.

The core curriculum configuration is similar in most schools of public health, being structured to meet the requirements of the Council on Education for Public Health (CEPH), the accrediting body for public health schools and programs. These courses are designed

to cover knowledge areas basic to public health. As an example, a brief description of the core curriculum of a school of public health (as they appear in the school catalog) is shown in Table 5. The purpose is to demonstrate not only the rich technical content but also the lack of focus on any specific vulnerable population.

A student can graduate with a minimum of 36 hours. The core courses take 18 hours of this total and the remainder of the credit hours come from the students major track course requirements and one or two electives. Students may take an elective in MCH courses, but this is a rare occurrence.

The core curriculum in the Schools of Public Health gives the students quantitative skills, and possibly overall knowledge of, public health concepts, health systems and interaction of health and behavior. This enhances the knowledge they acquire from their primary disciplines. These diverse skills acquired by the students need to be applied in the context of a specific population; for example, mothers and children who are the most vulnerable population and contribute to the greatest proportion of mortality and morbidity and potential life lost, in the world, and particularly in the third world.

Sufficient basic information on health issues of mothers and children will help students apply skills from the core courses and their primary disciplines in the areas of needs assessment, research, priority setting for resource allocation, planning, implementation and evaluation of programs for mothers and children.

Without specific directed efforts, a large majority of students will acquire the specific discipline skill with virtually no exposure to maternal and child health issues. These students

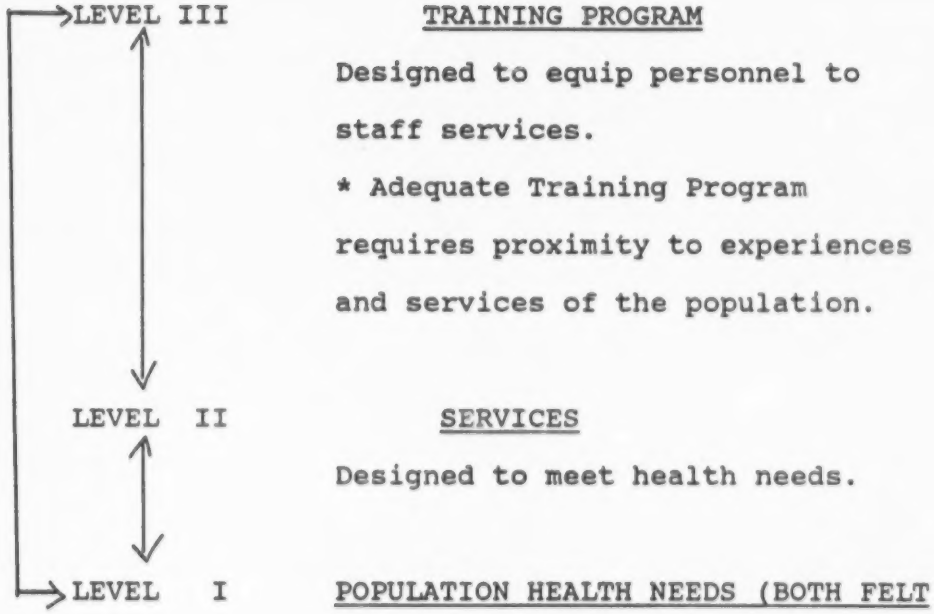
are likely to be placed in key positions in health and have the responsibility of making decisions and influence policies that affect the health of mothers and children. Therefore schools of Public Health are faced with a challenge to explore methods of exposing public health students, in their limited period of public health education, to the health problems, issues, and needed services for mothers and children.

Specifically in the case of foreign students, it can be argued that the best milieu or environment to educate public health practitioners to impact maternal and child health practice in the third world will be in the third world environment. This will enhance population-based approach to program planning.

The ideal approach in Maternal and Child Health Training is the utilization of 3 level interrelated concept, in which the training program is in close proximity to the population in need, and in the environment for service delivery as shown in Figure 1. This close interaction and exchange between recipients of public health education and the community in need of the public health services has the potential to maximize the match of trainees' education to their future responsibilities. This would ameliorate the isolation of public health education from public health practice, a current concern expressed by the Institute of Medicine's report on public health education (5).

Figure 1.

IDEAL RELATIONSHIP BETWEEN TRAINING PROGRAMS, HEALTH SERVICES AND HEALTH NEEDS;
(3 LEVELS CONCEPT)


LEVEL III
TRAINING PROGRAM
Designed to equip personnel to staff services.
* Adequate Training Program requires proximity to experiences and services of the population.
LEVEL II
SERVICES
Designed to meet health needs.
LEVEL I
POPULATION HEALTH NEEDS (BOTH FELT AND REAL)
Recognition and Measurement of health needs of mothers and children.

This setting encourages practical experiences and exposure to the problems and health needs of the population and application of principles learned in the classroom to the context of "real world" situations. Thus training is more adequate if there is congruence and close interaction between a training program (students, faculty, and curriculum), services and population in need.

However although the learning situation in this case may not be the "ideal", the presence of these key personnel from foreign countries in public health schools, compels us to take advantage of the circumstances for the following reasons: 1) There are tremendous academic resources available in the U.S.; 2) Also the U.S. can be considered intermediate between the developed world (eg. Sweden) with good maternal and child health indicators and the developing world with less than optimal MCH health indicators (8,9). Besides, health needs and services in certain subpopulation groups of mothers and children, rural and inner city minority groups simulate closely what exists in some developing countries (9); 3) There are also health services systems which represent a whole spectrum of extremes of technology from the most complex to the simple, with variable effectiveness and efficiency making the United States a natural environment to study the appropriateness of programs to meet health needs of women, infants and children.

Recommendations:

Suggestions to improve MCH education in Schools of Public Health include (1) directed electives for an overview maternal and child health course, or (2) institution of a required maternal and child health course, (3) incorporation of relevant and emerging MCH issues in all core courses providing an avenue for MCH faculty to address these areas in the core curriculum, and (4) encouraging institutions to offer double majors combining MCH and with any of the other disciplines. For example Epidemiology/MCH, health Education and Behavior/MCH, International Health/MCH, etc.

Also for the benefit of domestic students, it will be most useful to examine the nation's health objectives specific to

maternal and child health and use those as a guide to prioritize MCH content in the courses, specifically the core courses. These strategies would give non MCH major students exposure to knowledge base in maternal and child health, and an incentive and ability to become better informed and more effective as advocates for women, infants and children in their future career. Similar benefits will be expected for domestic public health students. In view of the fact that different schools of public health may have a different overall mission of the school, this whole concept should be examined in the context of the school's mission and the type of students the school attracts and recruits.

As an example, for a school situated in the deep south with the poorest maternal and child health status indicators, and with relatively high enrollment of foreign students the need for school wide education on health issues of mothers and children is clear. This strategy will be a potentially long term investment in affecting policies which influence infant mortality in the third world and in the U.S.. The Institute of Medicine's report on public health education stressed that universities should strengthen their efforts to train people for important but neglected tasks; such as improving the health of minority groups (5). Mothers and children living in poverty constitute a vulnerable minority population worldwide.

A Specific Example of MCH Course for Foreign Students:

At the School of Public Health, UAB, in order to introduce the non-MCH majors to the needs of mothers and children in the developing countries, and effective interventions in both

developing and developed nations a comparative maternal and child health course was developed.

The goal of the course is (1) to provide a knowledge base in MCH to non MCH major foreign students and other students planning to work in developing countries, and (2) to encourage effective advocacy and positively influence policy formulation for improvement of health of mothers, infants and children in developing countries. This would achieve a long term overall goal of lowering infant mortality in these countries.

Comparative approach is used to address health problems and solution strategies for this most vulnerable sector of the worlds population, mothers and children of the third world. Although emphasis is on the health problems of mothers and children and various attempts at solutions in the third world (developing and less developed nations) comparisons are drawn from developed countries to better illustrate theoretical and practical aspects of designing, implementing and evaluating health services for mothers and children.

Countries considered fall into one of the following 4 major categories:

(1) Developed nations like Sweden, Finland and Japan with comparatively excellent MCH health indicators. (IMR < 6.0, in 1987)

(2) Developed nations eg USA, with intermediate MCH health indicators. (IMR 10.-20, 1987)

(3) Developing nations with improving MCH health indicators eg. Chile, Sri Lanka, Costa Rica, China (IMR = between 15-40 in 1987)

(4) Developing nation with poor MCH health indicators eg. Afghanistan, Nigeria, Sudan, Angola with IMR > 120 in 1987.

Even though infant mortality is one of the key MCH health status indicators that is thoroughly examined, other MCH health indicators are addressed, for example, under five childhood mortalities and morbidities, and maternal mortality. There is extensive discussion of the value and appropriateness of exploring other biomedical and socioeconomic maternal and child health status indicators for monitoring maternal and child health status worldwide.

The major orientation of the course is to choose an important maternal and child health outcome indicator for example infant mortality and examine it from different perspectives; its validity as maternal and child health status indicator (alternative or additional indicators), epidemiology, prevention and relationship of the indicator to maternal and child health service systems. Examples are incorporated from developing and developed nations. Class exercises which revolve around the same outcome gives students opportunity to explore in detail the issues discussed in class, as they apply to a particular developing country. The classes are structured to encourage student's discussion of reading assignments, sharing of experiences, problem solving using case studies and group discussion. Interdisciplinary group collaboration is encouraged in all class exercises. Major papers in the course revolve around MCH problems which will stimulate student to acquire a methodological approach to the problem in a third world country (their country of origin or where they plan to work in the future). By working through a problem and its solution

as applied to a particular country, students have been able to identify gaps in services and in data collection and management, need assessment, planning, implementation and evaluation of maternal and Child Health programs in third world countries. Class exercises give students the opportunity to apply some of the skills they have acquired in other disciplines of public health curriculum to the MCH population. The diverse background of students and group exercises, enhanced sharing and was a mutual learning experience for students. A recent and exciting development in the diversity of students' enrolled is the increasing interest of domestic MCH students. Their participation and interactions have enriched learning of all enrolled students.

A total of 16 students from a wide range of disciplines and with diverse majors within the School of Public Health have taken the course over the past three summers. The countries represented are Zaire, Ethiopia, Uganda, Kenya, Nigeria, Egypt, and United States. Primary disciplines of the students were physicians (4), nurse (1), dentist (1), Health administrator (1), health educator (4), teachers (3), mental health counselor (1), and physical therapist (1).

The School of Public Health majors of these students were International Health, Health Administration, Epidemiology and Domestic Maternal and Child Health. Of the five students from the African continent, four have completed their Masters of Public Health and have gone home to their native countries. Some of the US students have found positions with international organizations to work in developing countries.

Further ongoing student tracking is necessary to evaluate the positions and responsibilities of these graduates and their involvement in MCH service delivery and policy making. This is being planned through a survey questionnaire that examines a match of knowledge and skills acquired with the current job responsibilities.

Conclusion

The past several years have been an era of increasing specialization in public health education. The target students have been clinically trained health leaders as well as students with no practical experience in the health field. This situation is true for both developed and developing nations. There needs to be a way of bridging this "streamlining" and specialization with the real and changing needs of populations so that the specialist in public health still has enough knowledge base of needy populations, like women and children, to apply his skills appropriately. In most cases the graduates' prior preparation and the role these professionals are expected to play is incongruent. For example, a clinically trained physician from developed or developing nation after a masters in public health in epidemiology or international health cannot necessarily manage a family health service or be an effective Minister of Health.

Public health students of various disciplines in the United States should also be exposed to domestic maternal and child health issues, if indeed the future players in the public health arena of this country are to be knowledgeable and effective advocates for women and children. The need for universal exposure of students to health issues of needy populations like women and children is a

challenge to schools of public health curriculum planners and educational policy committees. Addressing this dilemma will be a major factor in realizing the goal of health for all by the year 2000.

Table 1

Foreign Student Enrollment in UAB
School of Public Health,
Academic Years 83-89

Academic Year	Total Number of Students	Total Number of Foreign Students	Percent Foreign Students
1983/84	146	7 (2 Permanent Residents)	4.8%
1984/85	150	17 (2 PR)	13%
1985/86	225	27 (9 PR)	12%
1986/87	318	50 (11 PR)	15.7%
1987/88	325	72 (13 PR)	22.2%
1988/89	262	57 (11 PR)	21.7%

Total number of foreign students enrolled between 83-89 was 143. In the above table there is overlap of students from one academic year to another.

Table 2

Origin of Foreign Students in
UAB School of Public Health
Total n = 143

Countries	Number of Students	Percent
Asian Countries	66	46.2%
African Countries	49	34.3%
Middle East	11	7.7%
Europe	7	4.9%
South America	7	4.9%
Virgin Islands	3	2.1%

Main countries represented from above groups:

African countries - Nigeria (16) Egypt (14) Kenya (15)
Asian countries - China (24) India (18) Thailand (10)
Pakistan (7)
South America - Honduras (2)
Middle East - Jordan (3) Saudi Arabia (2) Syria (2)
Europe - Italy (2) Spain (2)
Virgin Islands - Jamaica (2) Trinidad (1)

Table 3

Professional Background of Foreign Students
Enrolled in School of Public Health

Profession	Number Enrolled	Percent
Physician	68	55.3
Dentists	18	14.7
Health Educators	10	8.1
Nurses	6	4.9
Nutritionists	5	4.1
Environmentalists	4	3.2
Veterinarian	2	1.6
Laboratory Workers	2	1.6
Teachers	2	1.6
Health Administrators	2	1.6
Statistician	1	0.8
Entomologist	1	0.8
Sociologist	1	0.8
Business Manager	1	0.8

*Information available on 123 students, out of 130 actively enrolled students. Student on leave of absence omitted.

Table 4

School of Public Health Majors
for 126 Foreign Students

	Number	Percent
Epidemiology	56	45.9
International Health	28	22.9
Environmental Health	14	11.4
International Dental Public Health	12	9.8
Health Education/ Health Behavior	6	4.9
Maternal and Child Health	4	3.2
Public Health Nutrition	2	1.6

Table 5

MPH Core (school-wide requirements)

PHA 500. Introduction to Epidemiology. Principles of epidemiologic methods, factors influencing health and disease in populations. Relationship between host and environment; investigation of role of possible relevant factors.

PHA 512-513. Biostatistics I and II. Logic and language of scientific methods in life science research, use of basic statistics in testing hypothesis and setting confidence limits. Simple and multiple regression and elementary experimental designs.

PHC 500. Introduction to Public Health Programs and Policies. History of public health, mental health and medical care systems (principally in United States). Overview of programs, policies and practices, including general introduction to program management.

PHE 500. Fundamentals of Environmental Health. Contemporary problems facing nation in air and water pollution, environmental monitoring, toxicology, sanitation, hazardous waste and general problem of environmental contamination. Legal and political aspects of current regulations as well as general principles of science applied to evaluation and control of specific problems.

One of the following:

PHB 550. Behavioral Science and Health: An Overview. How behavioral science interacts with health and illness. Behavior of consumers and professionals.

PHC 501. The Economics and Finance of Public Health. Economics, principles of economic analysis, and applications of economics in health sector. How health system deviates from traditional laws and principles of economics; how health professional must understand system to deal with problems of cost and access in health care system. Application of health economics to health policy decisions (with special attention to cost-benefit/cost-effectiveness analysis) and to expenditures for public health and funding of state and local health departments.

PHD 505. Sociocultural Aspects of Health and Illness in Developing Countries. Sociocultural determinants and effects of health conditions and practices in developing countries. Comparisons of modern and traditional health care systems; review of sociocultural barriers to improving health care delivery and utilization.

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